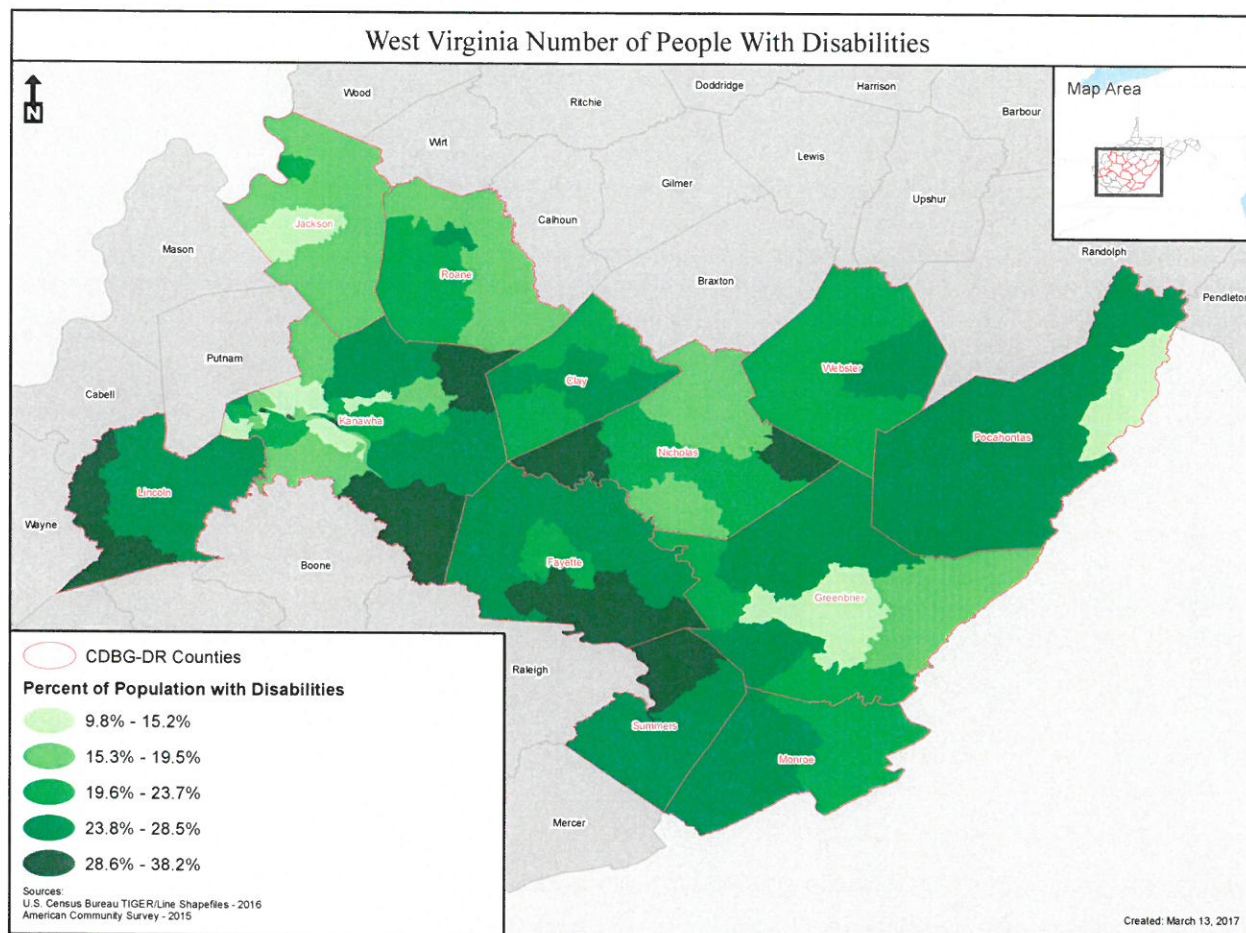


Disabled

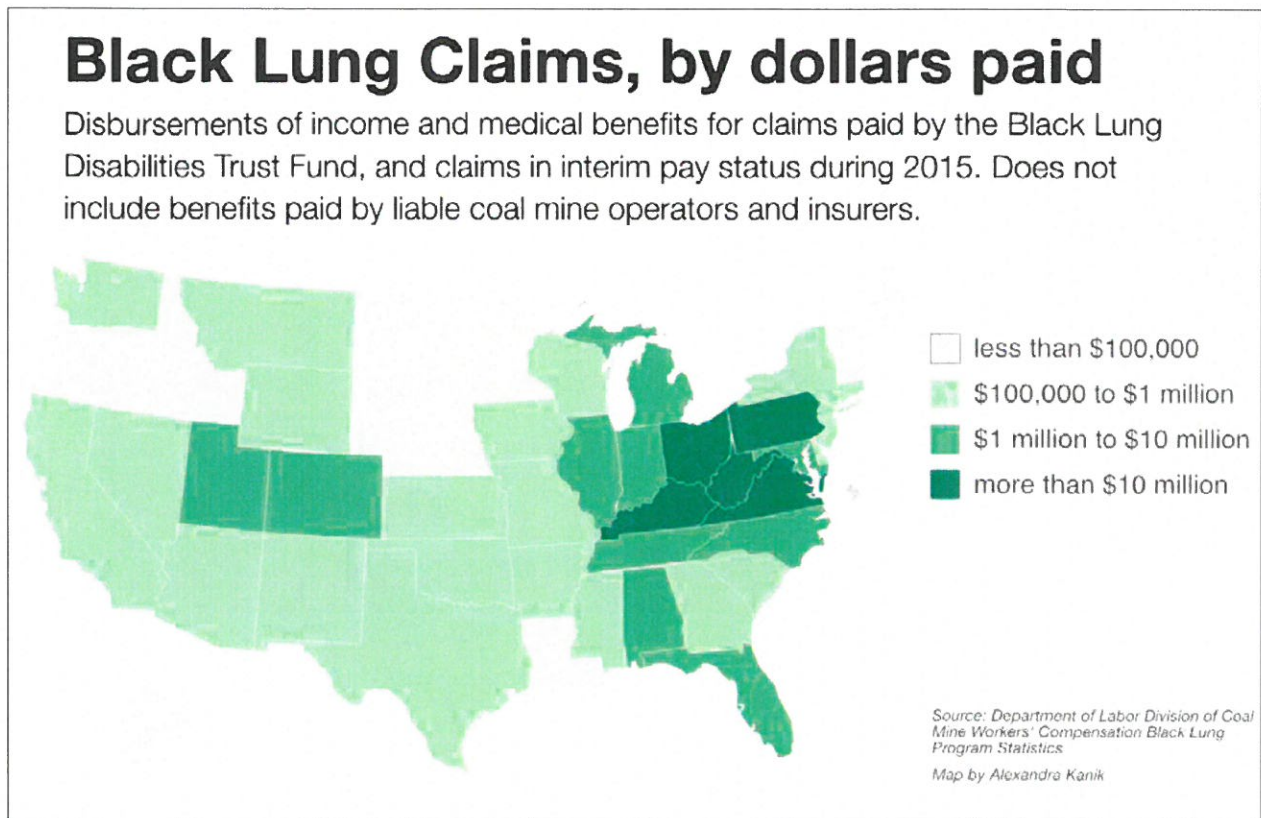
The disabled population in the state is double the national average. Persons living with a disability below the age of 65 in the declared counties averages 17%, which doubles the national average of 8.6%. The following map shows the areas within the declared counties where the highest percent of disabled people live.

Figure 4: Disabled Population



One of the most pressing issues in the state is disability tied to employment, particularly with the high incidence of black lung disease among former coal miners. Residents in West Virginia with black lung disease received almost \$40 million in Part C Black Lung Claims and Disbursements in FY 2016 from the U.S. Department of Labor (DOL), the highest amount among all 50 states.³ The Division of Coal Mine Workers' Compensation at the DOL administers the claims filed under the Black Lung Benefits Act. The Act provides compensation to coal miners who are totally disabled by pneumoconiosis arising out of coal mine employment, and to survivors of coal miners whose deaths are attributable to the disease. The Act also provides eligible miners with medical coverage for the treatment of lung diseases related to pneumoconiosis.

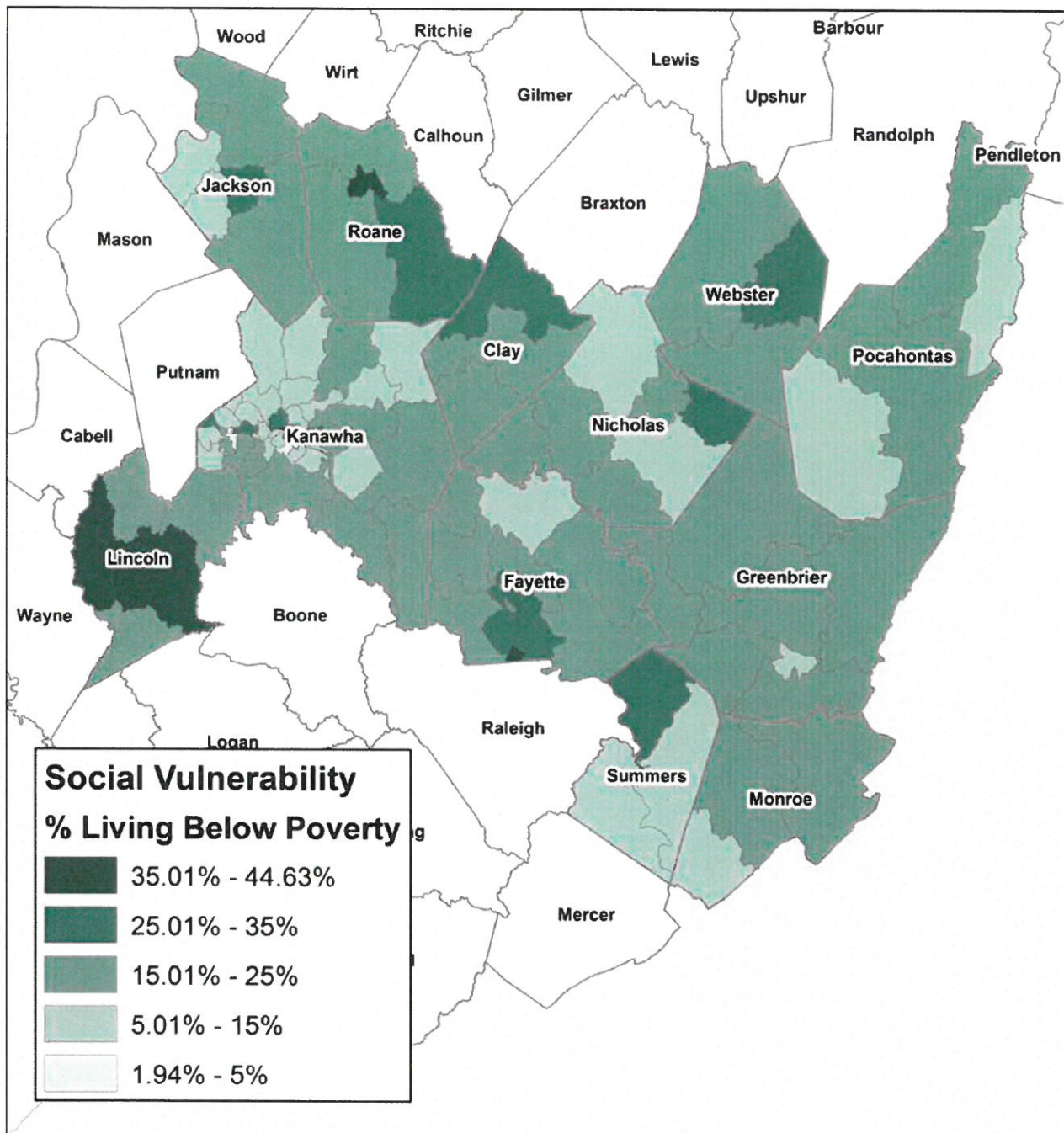
³ <https://www.dol.gov/owcp/dcmwc/statistics/bls2016/DistributionOfClaimsByState2016.htm>

Figure 5: U.S. Black Lung Claims

Poverty

West Virginia has a larger percentage of persons in poverty (17.9%) when compared to persons nationwide (13.5%). Specifically, one in four children in West Virginia is living in poverty. Further, of the 12 declared counties many are considered severely impoverished, including Clay, Lincoln, Summers, and Webster, with nearly all doubling the national poverty percentage. Because most of West Virginia's landscape is rugged and rural, many of the residents living in poverty are isolated with limited access to public transportation or jobs that pay above minimum wage. The following SoVI® map shows the areas within the declared counties where the highest percent of people living in poverty are located.

Figure 6: Social Vulnerability percentage living below poverty



Unemployment

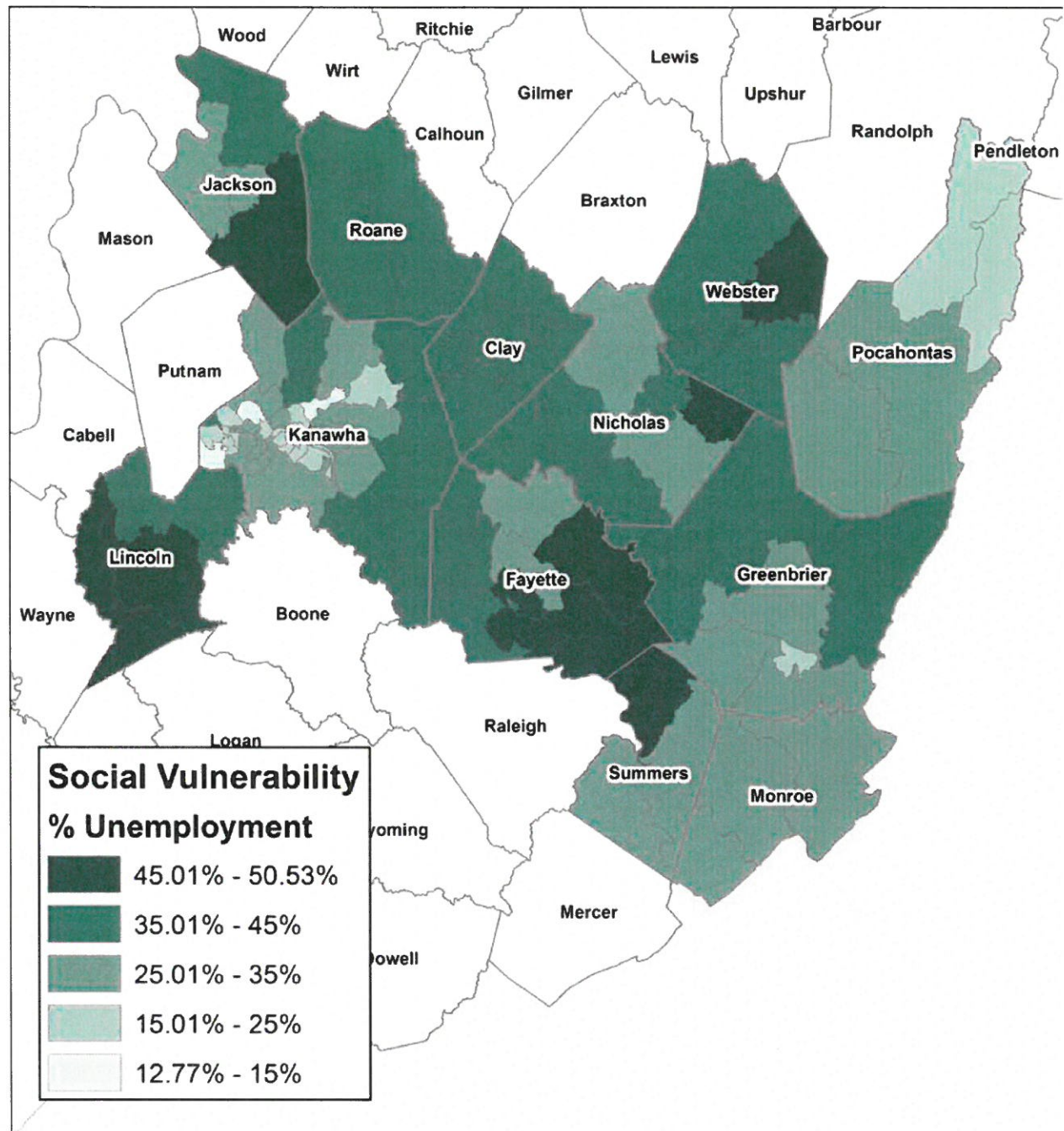
West Virginia currently has the fifth highest rate of unemployment in the continental U.S., mostly due to the decrease in coal production experienced in the past few years.⁴ In 2013, West Virginia ranked last in the nation with an employment-to-population ratio of 50%, compared to the national average of 59%.⁵ According to WorkForce West Virginia, the state lost 5,600 jobs in its labor force in four critical economic sectors: construction (1,900), manufacturing (1,100), retail (1,800), and education (800), while gaining just 400 in mining and logging. The state's Civilian Labor Force dropped by 15,100. As jobs have disappeared or moved elsewhere, the

⁴ Current Unemployment Rates for States, Bureau of Labor Statistics, February 2017

⁵ Regional and State Unemployment – 2013 Annual Averages, U.S. Bureau of Labor

state's workforce has essentially shrunk. Additionally, because West Virginia has the oldest population in the nation many residents are simply aging out of the workforce while younger residents are moving out of state in search of opportunities available outside of the traditional mining and logging industries. The following SoVI® map shows the areas within the declared counties experiencing the highest rates of unemployment.

Figure 7: Unemployment rates



Homelessness

The West Virginia Coalition to End Homelessness (WVCEH) is the state advocacy body for issues of homelessness in West Virginia. They are the lead agency responsible for the balance of the state's Continuum of Care as well as the SSI/SSDI Outreach Access and Recovery (SOAR) state lead. They maintain a client-level HMIS database which provides data on the state's homeless population in an effort to provide an unduplicated count of homeless individuals, related demographics, and their needs over time. The following services are provided to homeless individuals by WVCEH:

- **Emergency Shelter:** These shelters are meant to act as a temporary, emergency triage until the next step in more permanent housing is available. In 2014, a total of 1,545 beds in emergency shelters were available in West Virginia.
- **Transitional Housing:** Consists of the placement of homeless individuals and families into project-based, or leased rental housing with case management, with a goal of exit to permanent housing. In 2014, a total of 589 beds in transitional housing were available in West Virginia.
- **Rapid Re-Housing:** A model that concentrates on moving a family or individual experiencing homelessness into permanent housing as quickly as possible. A total of \$594,000 in ESG and \$3,296,500 in SSVF funding was spent in 2014 to rapidly rehouse the homeless in West Virginia.
- **Permanent Supportive Housing:** A long-term housing subsidy with intensive case management designed specifically for those who are defined as chronically homeless. A total of 1,401 beds were available in West Virginia in 2014. ⁶

HUD's 2015 Annual Homeless Assessment Report to Congress found an overall 11 percent decline in the number of persons experiencing homelessness since 2010, including a 26 percent drop in the number of persons living on the streets. In West Virginia, local communities reported a total of 1,835 people experienced homelessness, representing an 18.9 percent decline since 2010, the year President Obama launched Opening Doors—the nation's first-ever comprehensive strategy to prevent and end homelessness. Between 2014 and January 2015, veteran homelessness declined 8.4 percent in the state; family homelessness decreased 25.4 percent; and chronic homelessness fell 17 percent. On a single night in January 2015, state and local planning agencies in West Virginia reported the following estimates of homelessness:

- Overall, homelessness declined by 178 persons or 8.8 percent between 2014 and January 2015. In January 2015, an estimated 1,835 people were homeless on a given night. Most (76.5 percent) were staying in residential programs for homeless people, and 23.5 percent were found in unsheltered locations.
- Homelessness among Veterans fell by 8.4 percent between 2014 and January 2015. On a single night in January 2015, 305 Veterans were homeless and 25.6 percent of those were on the street.
- Chronic homelessness among individuals continued to decline. Since 2010, chronic homelessness declined 31.8 percent. Nearly 400 people experiencing homelessness in January 2015 were reported as chronically homeless.
- Local communities reported a 25.4 percent reduction in families experiencing homelessness between 2014 and January 2015. Since 2010, family homelessness declined by 47.3 percent. ⁷

⁶ <http://www.endhomelessness.org/page/-/files/2016-05-10%202013.03%20Transforming%20Homeless%20Services%20in%20West%20Virginia%20Slides.pdf>

⁷ <http://www.wvva.com/story/30564681/2015/11/Thursday/homelessness-in-west-virginia-fell-88-percent-in-2015>

Figure 8: A snapshot of WVCEH's performance during the 2014 Point in Time Count

How are we doing with using what we have?

**Total Persons Housed vs. Beds Available
WV 2014 PIT Count**



Table 4: U.S. Census Comparison

People	Declared Counties	West Virginia	United States
POPULATION			
Population estimates, July 1, 2015, (V2015)	412,543	1,844,128	321,418,820
AGE AND SEX			
Persons under 5 years, percent, July 1, 2015, (V2015)	5.6	5.6	6.2
Persons 65 years and over, percent, July 1, 2015, (V2015)	20.5	18.2	14.9
Female persons, percent, July 1, 2015, (V2015)	50.7	50.6	50.8
RACE AND HISPANIC ORIGIN			
Black or African American alone, percent, July 1, 2015, (V2015) (a)	2.0	3.6	13.3
American Indian and Alaska Native alone, percent, July 1, 2015, (V2015) (a)	0.3	0.2	1.2
Asian alone, percent, July 1, 2015, (V2015) (a)	0.7	0.8	5.6
Two or More Races, percent, July 1, 2015, (V2015)	1.3	1.6	2.6
Hispanic or Latino, percent, July 1, 2015, (V2015) (b)	1.1	1.5	17.6
POPULATION CHARACTERISTICS			
Veterans, 2011-2015	34,328	150,021	20,108,332
Foreign born persons, percent, 2011-2015	0.7	1.5	13.2
HOUSING			
Housing units, July 1, 2015, (V2015)	210,585	885,475	134,789,944
Owner-occupied housing unit rate, 2011-2015	77.2	72.5	63.9
Median value of owner-occupied housing units, 2011-2015	\$91,600	\$103,800	\$178,600
Median gross rent, 2011-2015	\$555	\$643	\$928
Building permits, 2015	393	2,814	1,182,582
FAMILIES AND LIVING ARRANGEMENTS			
Households, 2011-2015	173,519	740,890	116,926,305
Persons per household, 2011-2015	2.4	2.43	2.64
Living in same house 1 year ago, percent of persons age 1 year+, 2011-2015	90.2	88.2	85.1
Language other than English spoken at home, percent of persons age 5 years+, 2011-2015	1.8	2.5	21.0

<i>People</i>	<i>Declared Counties</i>	<i>West Virginia</i>	<i>United States</i>
EDUCATION			
High school graduate or higher, percent of persons age 25 years+, 2011-2015	81.1	85.0	86.7
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	14.2	19.2	29.8
HEALTH			
With a disability, under age 65 years, percent, 2011-2015	17.0	14.4	8.6
Persons without health insurance, under age 65 years, percent	11.7	7.2	10.5
ECONOMY			
In civilian labor force, total, percent of population age 16 years+, 2011-2015	49.6	53.9	63.3
In civilian labor force, female, percent of population age 16 years+, 2011-2015	44.5	49.2	58.5
Total health care and social assistance receipts/revenue, 2012 (\$1,000) (c)	\$2,817,271	\$12,259,395	\$2,040,441,203
Total retail sales, 2012 (\$1,000) (c)	\$5,396,580	\$22,637,923	\$4,219,821,871
Total retail sales per capita, 2012 (c)	\$8,936	\$12,201	\$13,443
TRANSPORTATION			
Mean travel time to work (minutes), workers age 16 years+, 2011-2015	29.6	25.6	25.9
INCOME AND POVERTY			
	0.173210162		
Median household income (in 2015 dollars), 2011-2015	\$36,736	\$41,751	\$53,889
Per capita income in past 12 months (in 2015 dollars), 2011-2015	\$20,945	\$23,450	\$28,930
Persons in poverty, percent	21.7	17.9	13.5
BUSINESSES			
Total employer establishments, 2014	9,046	37,354	7,563,085
Total employment, 2014	133,226	575,228	121,079,879
Total annual payroll, 2014 (\$1,000)	\$5,208,571	\$22,100,477	\$5,940,442,637



Image 7: Flooded homes along the Elk River

Housing

Due to the region's economy, topography and population, much of the rural areas of West Virginia have historically experienced difficulties providing and maintaining an adequate supply of modern, quality, affordable housing for very low- to moderate-income households. In addition, it has been a challenge for the region to attract developers given the relatively low population densities, topography and lack of incentives to develop smaller properties.⁸ As a result, West Virginia consists of mostly single family homes with a sizable share of manufactured housing. The median value of owner-occupied housing units in the affected counties is one of the lowest in the nation at \$91,600. The national average is \$178,600. Comparatively, the median gross rent is \$555 compared to the national average of \$928. Additionally, the owner-occupied housing rate of 77% is significantly higher than the national average of 63% and highlights how West Virginia must respond to this flood. Typically, after a flood, families are forced to relocate for extended periods of time to shelters and other forms of temporary housing. In West Virginia, there has been a high incidence of residents who have refused to relocate temporarily and have instead, chosen to remain on their property in tents, automobiles, and campers next to their damaged homes while they await assistance. Some residents have chosen to shelter in place by removing disaster debris and mud from inside their damaged homes to make it habitable to some degree. West Virginia understands that the solution for these families is to create a housing repair program to rapidly repair the housing stock and get residents back into their homes.

Economy

West Virginia fell into a recession in 2015 with six counties experiencing Depression-era level unemployment. A total of 17,000 jobs have been lost over the last four years, many of which can be traced to the downturn in the coal industry. With the loss in jobs, West Virginia has seen a sizable decline in population as residents move out of the state for work (about 12,000 over the past three years). Only 53% of West Virginians are labor force participants which places the state last in workforce participation among all 50 states. The state's unemployment rate of 6% is expected to remain steady for the remainder of this decade.⁴ The State accepts that job programs and economic development activities are vital to the recovery of the state's residents. However, with such a large gap in housing unmet needs and limited recovery funds available, the State is limited in its ability to administer its own economic development programs with CDBG-DR funding. Because of this reality, the State has deliberately built relationships among other federal and state agencies with additional funding sources to

⁸ *West Virginia Statewide Housing Needs Assessment, West Virginia Housing Development Fund*

⁴ *West Virginia Economic Outlook 2017-2021*

leverage for economic development, such as the U.S. Economic Development Agency and Workforce West Virginia. It will work alongside these agencies and others in the coming months to design and implement programs to alleviate stresses on disaster affected local economies.



Image 8: A collapsed Dairy Queen as a result of flood damage

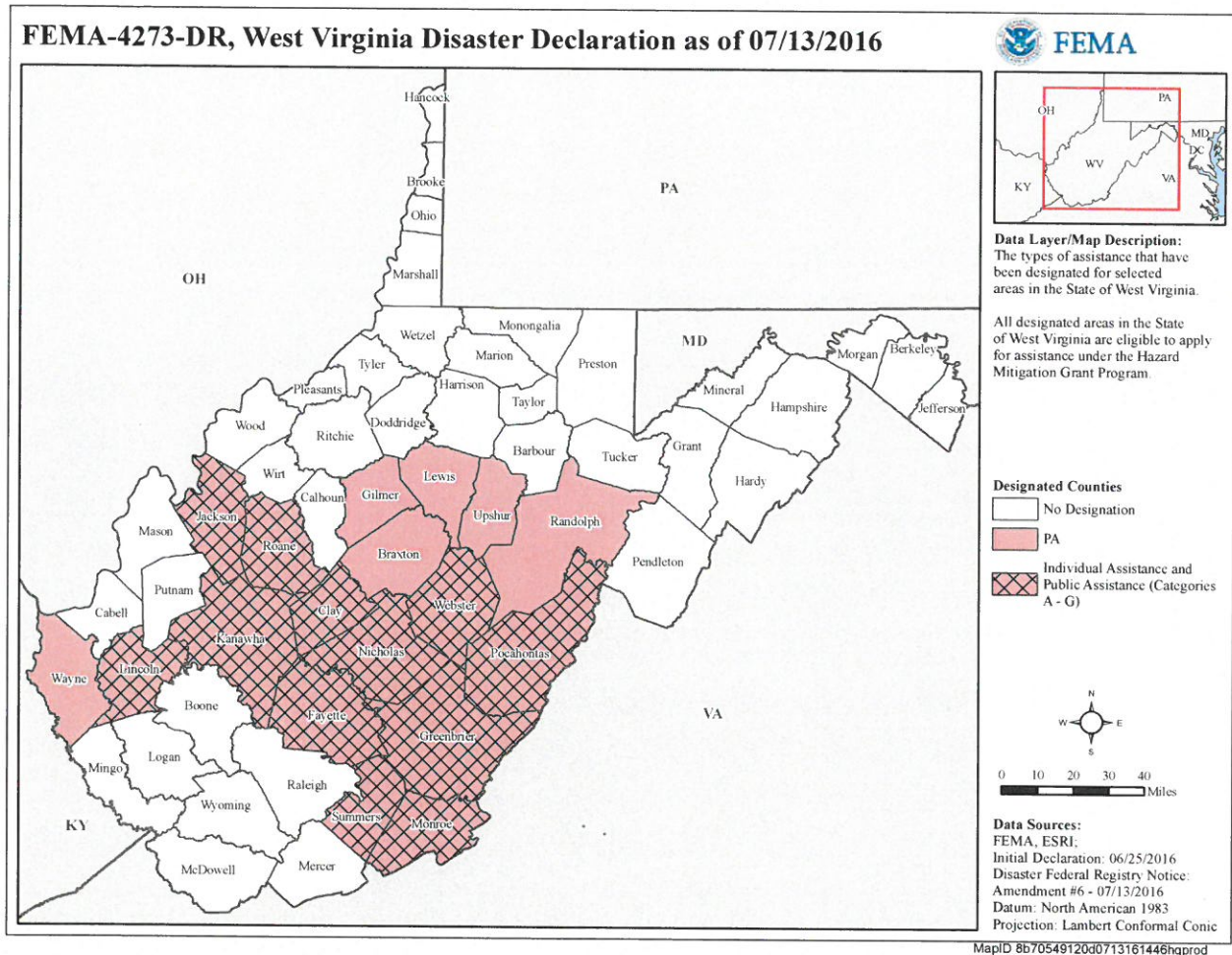
Infrastructure

Historically, West Virginians settled in areas that allowed for easy access to natural resources, ease of transportation and availability of flat stream or river bottom land for the growth of communities and development of local industries. Communities across the state were located near rivers in order to take advantage of all three. Previously robust communities in the southern portion of the state are now suffering declining local economies and populations due to macro-economic factors beyond their ability to control or influence. Additionally, local infrastructure damage has been exacerbated by decreased tax revenues that resulted in negative effects from postponed maintenance and flood associated repairs. Repeated damage from flooding has affected the infrastructure of several communities, resulting in systems that are now in need of major repairs, and upgrades that require relocation of major components of the systems. Before the flood, it was estimated in the 2013 Report Card for America's Infrastructure published by the American Society of Civil Engineers that West Virginia would need nearly \$6 billion in public infrastructure investment over the next 20 years.⁵ With a looming state budget crisis and limited recovery dollars available, the State intends to implement housing programs to further the most urgent need of returning people to their communities. The State will guide local jurisdictions through the FEMA PA process to ensure that all public services are restored and in turn, contribute to the full recovery of housing in the disaster affected counties. Specifically, the State will work with FEMA and local jurisdictions affected by the floods to prepare project worksheets for infrastructure costs eligible under the Public Assistance Program.

⁵ http://www.infrastructurereportcard.org/west_virginia/west-virginia-overview/

Disaster Declaration

Figure 9: West Virginia Disaster Declaration



Leveraging Funds to Improve Conditions in Disaster Affected Communities

The State's ability to adequately leverage all sources of funding available will be an imperative part of realizing a successful holistic recovery for the people of West Virginia. The State intends to improve the quality of life of the affected areas, particularly the areas consisting of the most vulnerable populations, by coordinating with other programs and funding streams available from federal, state, and local sources to ensure that available funds are disbursed in a prioritized manner to the neediest populations. The WVDOC has formed strong alliances with stakeholders who are delivering services throughout the declared counties in an effort to streamline delivery of funds and guarantee non-duplicative services are offered. Continued coordination will be vital throughout the life of the CDBG-DR program and the WVDOC will rely heavily on the lessons learned from other programs offered in the State.

III. IMPACT & UNMET NEEDS ASSESSMENT

IMPACT

Housing Impact

Pre-Existing Condition of the State's Housing Stock

Central Appalachia, with its substantial rural population, has a dispersed housing stock largely comprised of homes in small towns and isolated mountain valleys far away from major interstate highways and metropolitan areas. The overwhelming majority of residents are homeowners living on land that has been owned by their families for years. In fact, West Virginia's homeownership rate is the highest in the nation at 74.6%.¹ A common sight along many rural Central Appalachian roadways is a forested hillside with the occasional small home or aging manufactured home. Their isolated locations, combined with the limited economic resources available to their owners, too often mean that these modest dwellings are in substandard condition. Problems such as inadequate plumbing and sewage treatment systems have long plagued the region's residents.²

Image 9: A battered trailer and ice chest sit beside the river in Richwood



¹ <http://www.worldatlas.com/articles/the-most-homeowners-in-the-united-states.html>

² http://www.ruralhome.org/storage/documents/ts2010/ts_full_report.pdf

Manufactured housing is an important part of the housing stock in West Virginia, and is particularly important in the supply of affordable housing for low-income residents. Of the more than 131,000 mobile and manufactured homes in West Virginia, 28% are pre-HUD Code homes. Many residents of pre-HUD Code homes experience severe financial burden because they have low incomes and face relatively high housing costs. Household financial burden is exacerbated by the often-poor conditions of these homes, which can pose health and safety hazards in addition to driving high energy costs. When flooding strikes an already substandard home the effects can be catastrophic. With the flooding in June 2016 many manufactured homes were swept away by flood water, carried downstream and ripped apart.

In White Sulphur Springs, images and video were captured of a burning home being carried down the river as a result of the flood.³ In many cases, a new, more energy efficient home would offer these households the opportunity for financial stability and, in turn, the opportunity to provide for their children, build wealth for the future and age in place.⁴ Additionally, mitigating homes against future flooding that has plagued the region for decades will ensure that residents are protected in times of disaster and will increase their ability to rebound after a flood.

³ <http://insider.foxnews.com/2016/06/24/watch-house-fire-gets-carried-away-wv-flood>

⁴ http://cfed.org/assets/pdfs/State_of_Appalachian_Mobile_Homes_WEST_VIRGINIA.pdf

Image 10: A home destroyed by flood damage.



Impact to the State's Housing Stock

West Virginia residents are especially susceptible to flooding given the expansive rural housing located all around the state situated in valleys, bordering rivers and streams. With a high incidence of substandard housing due to the economic depression felt with the decline in coal production, any disaster only exacerbates the housing problem faced by many West Virginians. The floods of June 2016 were no different. Homes were swept off foundations and carried downstream, taking with them personal artifacts and memories that reflect entire lives spent in rural Central Appalachia. Nearly 3,500 homes, many of which have been owned by generations of

West Virginians for decades, were deemed structurally damaged by FEMA, and received funding for repair and replacement costs. Additionally, nearly 800 renters, including those who rented mobile homes, received rental assistance from FEMA to assist with temporary housing costs and personal property replacement.



Image 11: Home in Rainelle

Single Family Owner-Occupied Housing

At least 1,500 homes were completely destroyed and another 4,000 damaged in the flood.⁵ Additionally, over 2,300 properties were recorded as having an average high water mark of two feet or more in their homes throughout basements, first floors, and over roofs. Because of the inundation of water, 98% of these homes were deemed unsafe by FEMA with most lacking flood insurance. Over 3,400 applicants were approved for home repair amounts, with the average repair amount awarded being \$8,200.⁶ Numerous single family homes were inundated with mud spilling down from mountains with the rain. Further, mudslides and rain carried many mobile homes down river. The map on the following page shows the FEMA applicant ratio to housing units in the declared counties. This map shows the areas within the declared counties that had a high amount of applicants in relation to available housing units.

Although some areas in the state experienced lighter damage compared to others, the demographic characteristics of the counties highlight the fact that any amount of destruction in an area with vulnerable residents is particularly distressing because of their lack of adequate personal resources to properly recover. Examples provided by local officials in these areas include elderly residents without working appliances to cook a hot meal or do laundry, an impoverished child without food and clothing, and an unemployed former coal miner with black lung disease whose home hasn't been remediated for mold. In hard hit places like White Sulphur Springs where the poverty rate exceeds 25% of the total population of the town, it is a particularly devastating time for socially vulnerable residents. Adequate recovery will not happen for them without intentional, direct outreach to these areas on the part of the State.

⁵ <https://www.wsws.org/en/articles/2016/07/05/wvir-j05.html>

⁶ FEMA Individuals and Households application dataset

Figure 10: FEMA applicants and impact assessment

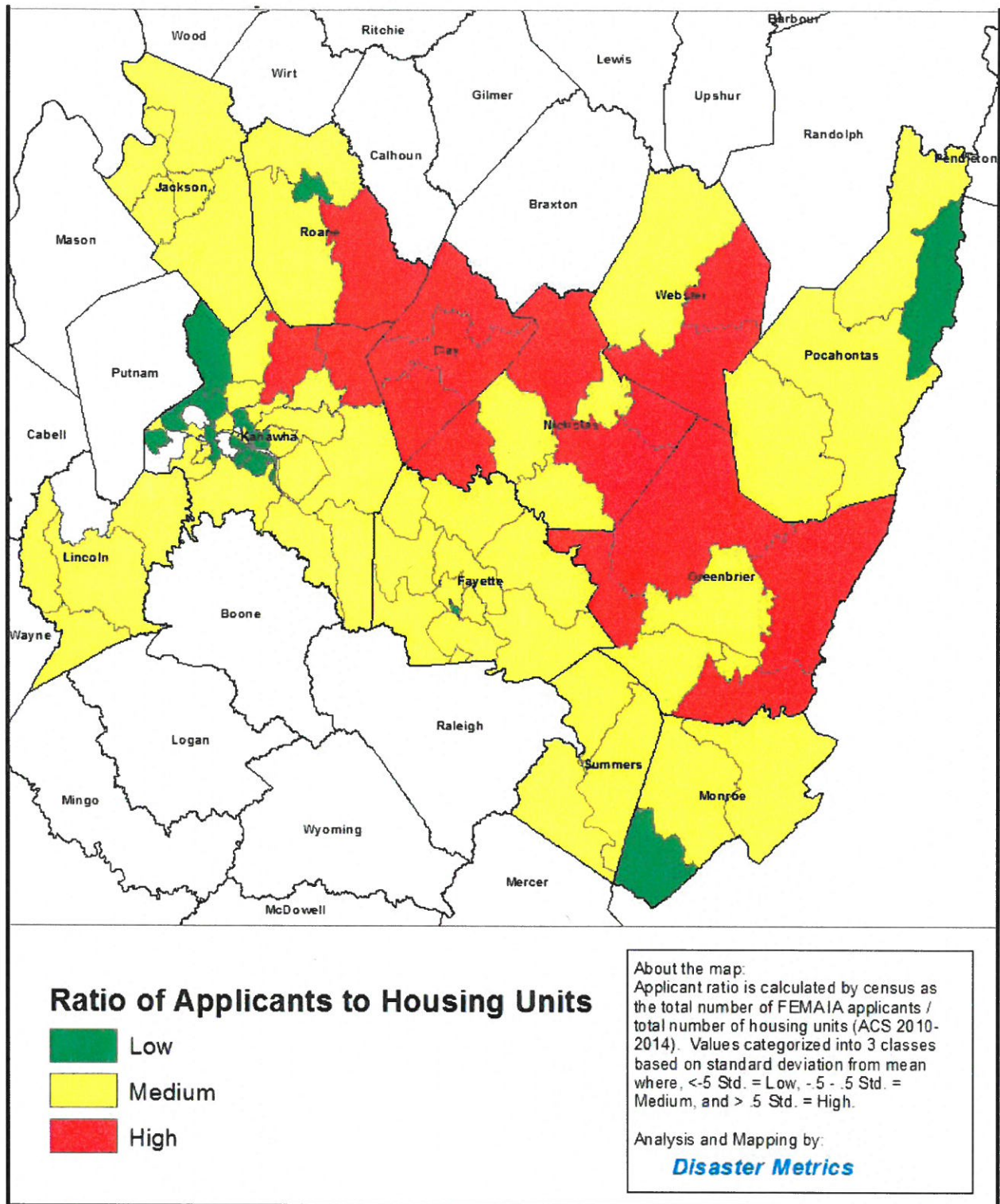
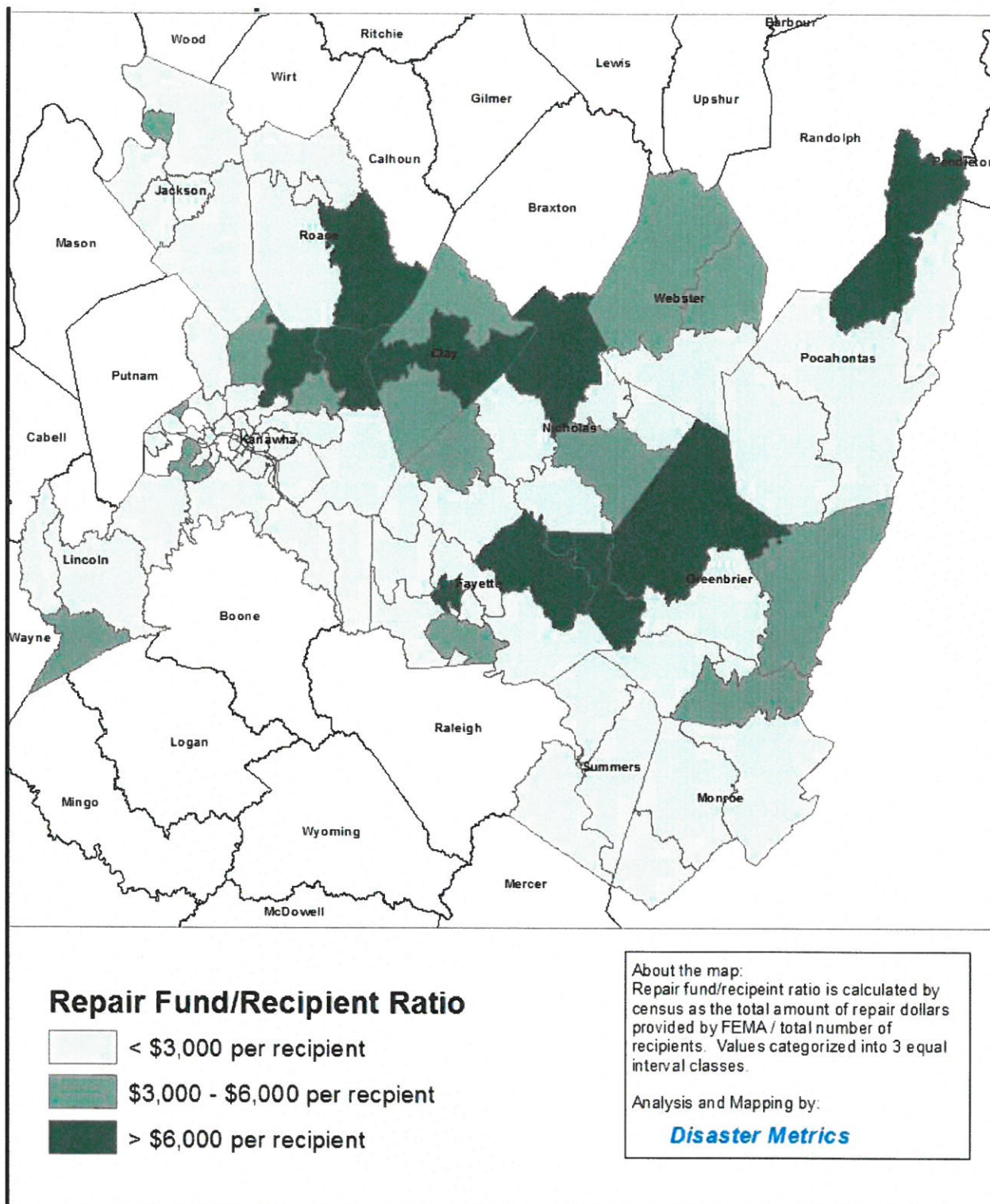


Figure 11: Repair funds to recipient ratio map



The above map shows the ratio of the amount of FEMA funds provided to recipients in the declared counties. It specifically highlights the areas within the declared counties where the highest average destructive flooding occurred among FEMA applicants. Below is a summary of the towns with the highest FEMA repair fund/recipient ratios in the declared counties.

Table 5: FEMA Applicants by County

<i>County</i>	<i>Town</i>	<i>Total Approved FEMA Applicants for Home Repair Funding</i>	<i>Average Home Repair Amount</i>
Kanawha	Clendenin	434	\$12,376
	Elkview	378	\$10,126
Greenbrier	Rainelle	290	\$14,530
	White Sulphur Springs	257	\$7,876
Clay	Procious	109	\$8,400
Nicholas	Richwood	108	\$6,135

Tenant-Occupied Rental Housing

Over 1,400 renters applied for FEMA assistance with 780 approved for funding. The average award for renters was approximately \$3,500. Over half of the renters approved for FEMA funding resided in four towns: Clendenin and Elkview along the Elk River in Kanawha County, and Rainelle and White Sulphur Springs in Greenbrier County. Although many renters from these impacted towns were approved for FEMA assistance, only 59 lessors of residential rental property, or landlords, applied for SBA loans, with a mere 29 ultimately approved for funding. Considering the high percentage of uninsured properties throughout the declared counties, it is presumed that there is a substantial share of landlords whose properties have gone unassisted since they are not eligible for FEMA repair funds and applications for SBA disaster loans has been low. Although \$1.8 million in assistance to landlords has been approved through SBA business loans, only \$200,000 has actually been disbursed thus far. When taking into account the economic conditions in the state and the fact that many rental properties are “mom and pop” operations it is evident that many of these landlords are already overleveraged and hesitant to take on more debt.

Image 12: The Elk River

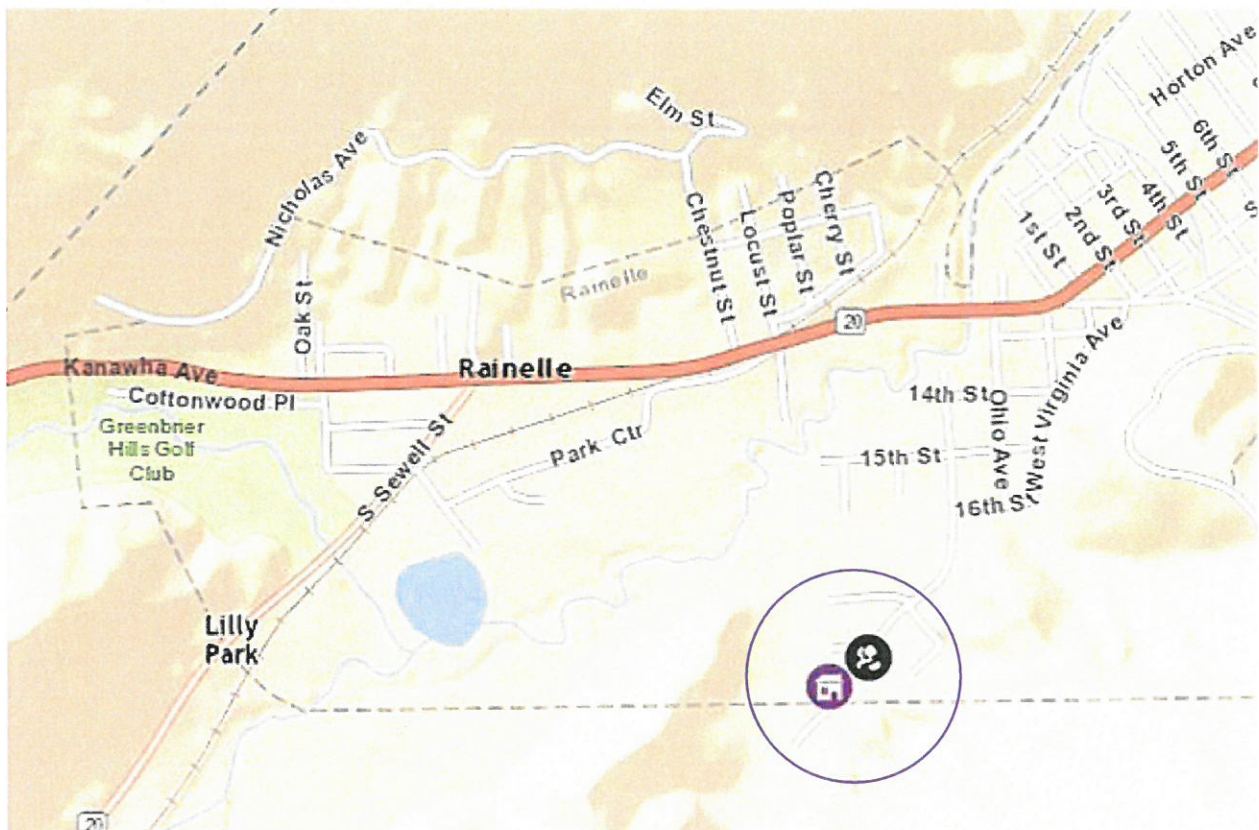


Affordable Housing and Public Housing

The WVDOC utilized HUD's Resource Locator to find HUD-financed housing units that may have been damaged as a result of the floods. The HUD Resource Locator and website is an enterprise GIS service that allows users to identify where housing resources are located in their area and the contact information for each. The resource locator uses housing data from HUD and the U.S. Department of Agriculture to map the affordable housing units available in an area.

Below is a snapshot of the HUD Resource Locator which has identified the affordable housing options in the town of Rainelle, West Virginia, a hard hit community in Greenbrier County. The two icons shown pinpoint the Sewell Landing Apartments, which is a low-income housing tax credit property that is also included in the USDA's Rural Housing program. It serves elderly and disabled tenants with ADA accessible one and two bedroom units.

Figure 12: Snapshot of HUD Resource Locator



West Virginia utilized the Resource Locator and contacted all 78 affordable housing properties located in Greenbrier and Kanawha and confirmed that three sustained damage – Elk Village and Elk Crossing in Elkview and North Bend Apartments in Harrisville. The reported damage consisted of impact to roofing, gutters, flooring, and landscaping. No insurance monies or other assistance was received for the damage. None of the tenants living in the properties had to be relocated because of the damage and all of the repairs to the buildings were made using available funds in reserve accounts. As set forth in the description of the State's programs to

be funded with this CDBG-DR Award, should these properties have unmet needs remaining, the HUD-financed properties will be prioritized to receive assistance. Refer to Appendix C for the record of contact made to HUD-assisted properties.

Additionally, the State of West Virginia contacted Public Housing Authorities (PHAs) throughout all affected counties to confirm if damages were sustained to their properties and whether there remains an unmet need. Although no PHAs reported damage to their owned developments across the State, there were reports of damage to Section 8 rental properties. Specifically, in Kanawha County, mostly in the Clendenin area, a total of 71 Section 8 units were damaged by the flood but have since been repaired. Addressing any remaining unmet needs of these properties will also be prioritized as set forth in the descriptions of the State's programs to be funded with CDBG-DR program funds.

In Greenbrier County rental subsidy needs were high even before the flood. The Greenbrier County Housing Authority Housing Choice Voucher Program is fully utilized with a waiting list of over 200 families.⁷ There simply are not enough vouchers in circulation to alleviate the shortage of affordable housing for those citizens who qualify. Repairing and rebuilding affordable and more resilient rental housing and prioritizing assistance to Section 8 landlords as well as those properties which are occupied by low to moderate income tenants will bring these communities back stronger providing refuge for the most vulnerable populations within them. Through the creation of its Rental Assistance Program, West Virginia will prioritize bringing safe, sanitary, and affordable housing units back to full operation for the benefit of the state's most vulnerable residents.



Image 13: A flooded mobile home along the Elk River

Homelessness Services

The floods of June 2016 primarily impacted the West Virginia Balance of State Continuum of Care (CoC) WVU Permanent Supportive Housing Projects (WVU) in Greenbrier County. Specifically, the floods displaced two tenants who needed permanent relocation assistance due to the damage to their units. WVU notified authorities that their housing services were available to those who were homeless, but most individuals and families were assisted by the FEMA Individuals and Household Program.

Overall, the disaster did not affect the CoC's efforts to end homelessness and no unmet needs remain. The CoC received HUD Disaster technical assistance and maintains regular communications with the WVDHHR Bureau for Behavioral Health and Health Facilities regarding the ways in which the CoC can provide services to address long-term homelessness. The CoC has also added additional questions to the HMIS intake work flow to track persons entering the system who may have been affected by the floods.⁸ The Coalition reported that because of adding these additional questions, 51 clients reported that they were personally affected by the flood. The average service period among the flood-affected population was 40 days. A total of 17 clients are still receiving services and as such, there is no unmet need outside of the services WVCEH is currently providing. Below is a summary of the services delivered to the impacted clients.⁹

⁷ Interview with Executive Director of the Greenbrier County Housing Authority

⁸ West Virginia Balance of State CoC FY2016 Application

⁹ Data provided by HMIS Specialist at WVCEH

Table 6: Homeless Services Provided

HOMELESS SERVICES PROVIDED TO FLOOD-AFFECTED CLIENTS	
Emergency Shelter	17
Homeless Outreach	10
Homeless Transitional Housing	1
Homelessness Prevention	6
Homelessness Services	5
Rapid Rehousing	12
TOTAL	51

West Virginia will continue to interface with the WVCEH as well as the WVDHHR and document their efforts and the services provided to the special needs populations affected by the flood. Additionally, with regards to the population served through the State's Housing Opportunities for Persons with HIV/AIDS (HOPWA) Program, the program manager confirmed that no HOPWA sites were specifically impacted by the June 2016 flood event.¹⁰

The State will ensure that the needs of any individual and/or family that is homeless or at-risk of becoming homeless are met through its CDBG-DR housing programs. Transitional housing, permanent supportive housing and permanent housing needs of this population will be prioritized, especially for those with incomes below 30% of the area median income, should unmet needs remain.

Emergency Shelters

Emergency shelters were set up by the Red Cross in the aftermath of the flood in all counties, coordinated in part by WV VOAD. Thousands of meals and supplies were delivered to these shelters by volunteer groups. While there was no reported damage sustained to any of the emergency shelters or transitional housing units in the declared counties, West Virginia understands the importance of capturing the increased client population and working together with the WVCEH to design a housing program that will benefit residents who are now homeless as a result of the flood by providing rapid rehousing and shelter. It is the intention of the State to prioritize the homeless population and other special needs populations through the application process of all housing programs outlined in this Action Plan.

Image 14: The back of Nicholas County Nursing Home several days after the flood

¹⁰ Interview with Kevin Meadows, program manager for West Virginia HOPWA program.

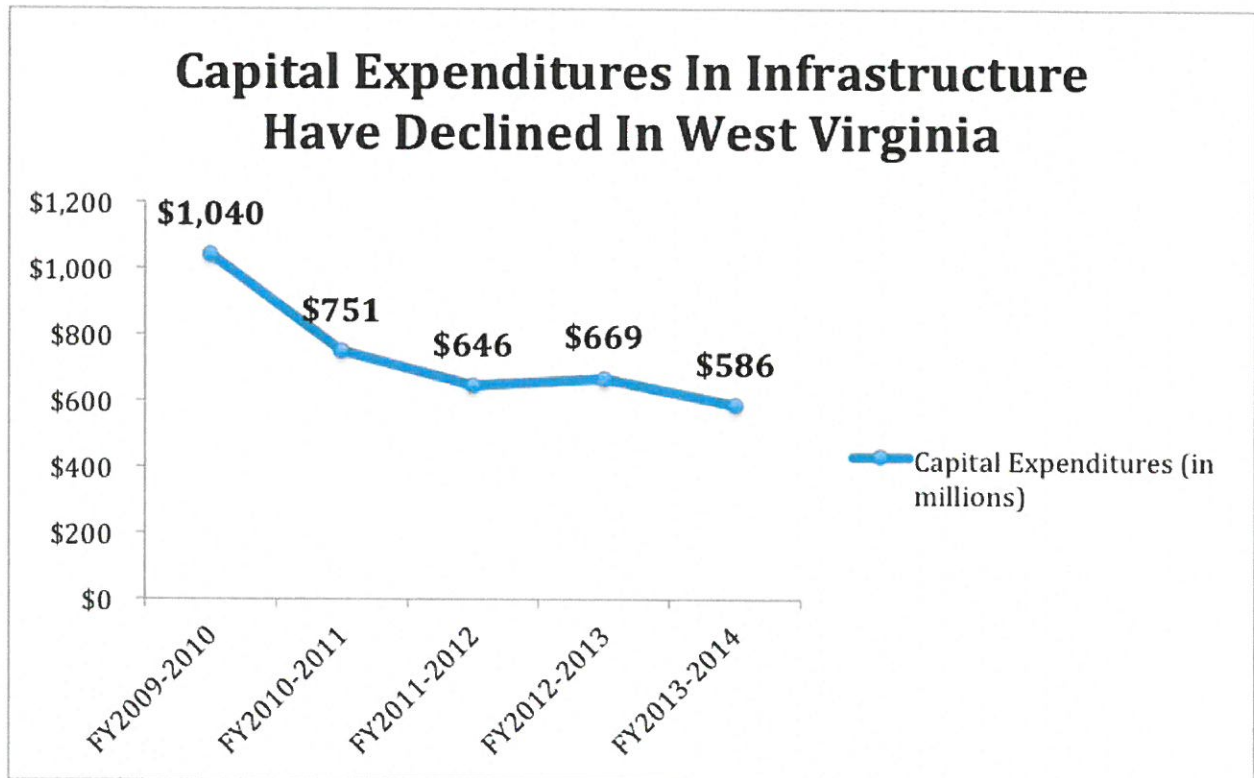
Infrastructure Impact

Pre-Existing Condition of the State's Infrastructure

West Virginia has 38,750 miles of public roads per the 2015 State Transportation Statistics report. The majority, 34,407, are owned by the West Virginia Department of Transportation. West Virginia has the 4th highest highway traffic fatality rate in the nation. Additionally, West Virginia has 7,163 bridges across the state, of which 96% are state-owned. One third of the bridges in the state are rated as structurally deficient or functionally obsolete by the U.S. Department of Transportation.¹¹

In the 2013 American Society of Civil Engineers (ASCE) Report Card for America's Infrastructure, West Virginia was noted as needing \$3 billion in wastewater and \$1 billion in drinking water infrastructure needs over the next 20 years. It is estimated by the ASCE that it costs each motorist in West Virginia \$469/year to drive on roads in need of repair. Investment in infrastructure has steadily declined in West Virginia in terms of capital expenditures for new construction of roads and bridges. State budgets indicate that capital expenditures from the Division of Highways are at a five-year low. During Fiscal Year 2009-2010, West Virginia spent \$1.04 billion on new infrastructure—\$807 million on roads and \$223 million on bridges. Fiscal Year 2013-2014 shows a sharp decline. Only \$586 million was allocated for infrastructure—\$381 million for roads and \$204 million for bridges.¹² The decrease in capital expenditures is a direct result of the budget crisis the state has experienced for the past few years.

Figure 13: Capital Expenditures in Infrastructure



¹¹ https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/STS_2015.pdf

¹² <http://www.wvpolicy.org/improving-infrastructure-good-for-west-virginia/>

Impact to the State's Infrastructure

The June 2016 flooding caused significant damage to state infrastructure and facilities. Damaged facilities that provide essential services, such as wastewater treatment plants and educational facilities were among the most affected. Despite efforts to protect imperative infrastructure items, facilities, and other assets, damage to such property was extensive. The current calculated total impact to state infrastructure as of March 21, 2017 is \$134 million per FEMA's Public Assistance obligated project details. This amount is expected to almost triple as new projects are approved and obligated by FEMA. The State, through the Department of Homeland Security and Emergency Management, is working one-on-one with impacted local jurisdictions to ensure that all eligible projects are captured under the FEMA PA program. May of the small towns throughout West Virginia, such as Rainelle and Richwood, experienced heavy damage to their local water and wastewater systems. As a result, it will be incumbent upon the State to guide them through the FEMA PA process to have their systems restored and public services offered to the local constituency base once again.

Department of Transportation

West Virginia is a key part of the East Coast transportation network and the damage from the 2016 floods stretches more than 200 miles. Per the National Weather Service, the state's third-deadliest flooding event caused the Elkview River to crest at more than 33 feet, rising 27 feet in a single day, causing significant damage to roads, such as large mud- and rockslides, roadway erosion, culvert and bridge failures, and the closure of many routes. The West Virginia Department of Transportation (WVDOT) has reported an estimated \$56 million of damage caused to the state's highway system. A total of 1,300 different locations of state roads were washed out by flood waters and 123 bridges received damage.



Image 15: Route 4 near Kanawha and Clay County lines washed away during flooding

A total of 15 bridges were completely destroyed and 250 roads were closed due to the storms.¹³ In various communities across the state, street lights and traffic signals were damaged by floodwaters and inoperable. The West Virginia Division of Highways is working closely with FEMA and WVDHSEM to account for all damage that may be eligible for Public Assistance (PA) on project worksheets (PWs). Currently half of the \$56 million in damage has been approved for funding and obligated by FEMA.

Public Schools

Flood waters damaged a total of 67 schools, with five deemed substantially damaged and approved by FEMA for demolition and rebuild.¹⁴ The five substantially damaged schools are located in the counties of Kanawha and Nicholas. In Kanawha County, Herbert Hoover High School and Clendenin Elementary were severely damaged.¹⁵ Water from the Elk River crested about 7 feet deep in the first floor at Herbert Hoover High School. Richwood High and Middle Schools, and Summersville Middle School were also severely damaged. Per State Department of Education attendance records for the five schools, over 2,000 students had to be relocated to nearby schools with many of the students housed in portable classrooms until the new schools are built. The West Virginia School Building Authority has worked closely with FEMA to address the destruction of the schools. The schools will have to be moved outside of the floodplain to minimize the effect of future flooding. There is currently no timeline for when all schools will be rebuilt. FEMA granted \$2 million to aid recovery efforts for schools in Nicholas County. Specifically, the \$2 million

¹³ Interview with Henry Bergstrom, Deputy Secretary at WVDOT

¹⁴ <http://wvmetronews.com/2016/11/17/fema-commits-to-replacing-five-schools-destroyed-in-june-flood/>

¹⁵ NOAA Event Narrative



ASHTON MARRA/WEST VIRGINIA PUBLIC BROADCASTING

Image 16: Musical instruments litter the floor of the band classroom at Herbert Hoover High School where seven feet of water filled the room during the floods

grant is being used to pay for temporary facilities to replace those inundated by the floods. Students in the Elk River communities will be in portable classroom buildings before the end of the 2016-2017 school year, according to Kanawha County Facilities Director Chuck Wilson. Bridge Elementary is currently housing students and staff from Clendenin Elementary. Those schools have been operating on a split schedule this year after June flood waters destroyed Clendenin Elementary. Herbert Hoover High School is dealing with the same issue this school year. Those students and staff are on a split school day at Elkview Middle. Portables will also be installed at Elkview Middle. Wilson stated that project is slightly behind Bridge. "The portables at Bridge are scheduled to be complete by March 23 and Hoover will probably be mid-April," he said. That's nearly nine months since the flood.¹⁶

Public Parks

The Division of Natural Resources reported over \$2 million in damage to the state's public parks, recreation areas, and wildlife. The Greenbrier River Trail, which cuts through Greenbrier County, sustained the brunt of the damage with parts of the trail covered in storm debris and large areas completely washed out. The trail is a 78-mile long rail trail used for bicycling, backpacking, cross-country skiing, and horseback riding. It traverses one of the most remote areas in the state and lies adjacent to the Monongahela National Forest, Seneca State Forest and Watoga State Park. The trail remains closed between mile 6.8 and milepost 13 because of the hazardous conditions as a result of the flooding.¹⁷ A summary of the damage is provided below.

Table 7: Damage to Public Parks

Greenbrier River Trail in Greenbrier & Pocahontas Counties	\$2m
Little Beaver State Park in Raleigh County	\$3k
Moncove Lake State Park in Monroe County	\$5k
Greenbrier State Park in Greenbrier County	\$100k
Babcock State Park in Fayette County	\$35k
Hawks Nest State Park in Fayette County	\$4k

¹⁶ <http://wvmetronews.com/2017/02/20/portable-classrooms-arrive-for-flooded-kanawha-county-schools/>

¹⁷ <http://www.greenbrierrailtrailstatepark.com/>

In addition, four wildlife management areas sustained the following estimated damage:

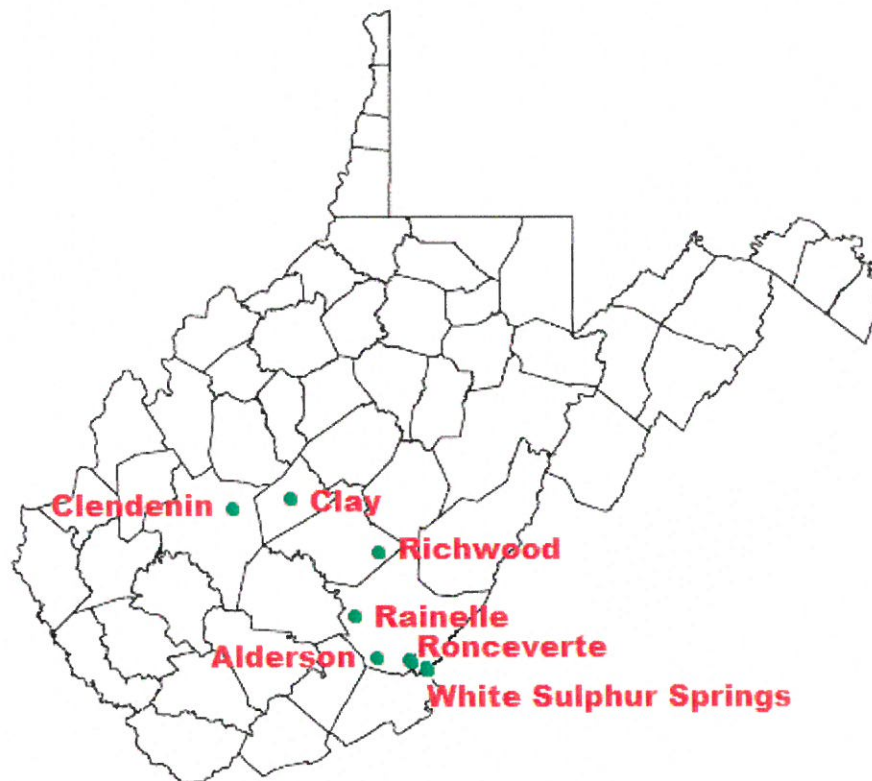
Table 8: Damage to Wildlife Management Areas

Public Stream Access Sites in Summers County	\$12k
Wallback Wildlife Management Area in Roane County	\$10k+
Edray Trout Hatchery in Pocahontas County	\$3k+
Bridge Handley Wildlife Management Area in Pocahontas County	\$3k+

Impact to Infrastructure in Local Communities

West Virginia had numerous rural water and waste water collection systems which sustained extensive damage from the flood. Most of the damage was to electrical systems including substations, motors, control panels, junction boxes, and instrumentation. The communities which suffered the most severe damage to water and waste water collections systems included the towns of Alderson, Clay, Clendenin, Rainelle, Richwood, and White Sulphur Springs. Through their elected officials all reported significant damage to their local infrastructure which is summarized here. WVDHSEM will continue to proactively guide these local jurisdictions through the FEMA PA process to ensure that all public services are restored to the impacted communities.

Figure 14: Map of impacted cities and towns



The town of Alderson reported extensive damage to the communities' water and wastewater collections systems which serves approximately 700 residents. Funding needed is estimated at \$2,500,000 and includes \$1,500,000 to repair damaged and aging wastewater collection systems, inspection of systems, and engineering services. Another \$1,000,000 will be needed to upgrade water filtration, increase water production and improve distribution systems.

The town of Clay will need \$3,500,000 to repair damaged to the distribution systems which serves almost 600 residents and extend services to the larger community, perform inspections of systems, and engineering services. Clay wastewater plant will require an additional \$1,500,000 to improve services through emergency backup power, flood proofing of the plant and to remove silt from the processing tanks.

The town of Clendenin experienced significant damage and reports in excess of \$12,000,000 needed to repair damages which includes \$1,500,000 to improve the distribution systems and extend services to the community, and perform inspections of systems and engineering services. Elk Valley PSD wastewater plant will require an additional \$6,500,000 to improve the collection system, repair slips along the Elk River, insulate the temporary line at Reynolds Avenue, repair emergency backup power and flood proofing of the lift stations, suction stations, and grinder stations. Additionally, Riverview Medical Center will require an estimated \$4,000,000 to repair flood damage to the building, repair and flood proof the electrical service and to reopen the 18 apartments.

The town of Rainelle has reported needs estimated at \$3,750,000 to repair damage to the water distribution systems which serves over 900 residents, including the lift and pump stations and the back-up generator. The Rainelle wastewater plant will require an additional \$1,500,000 to improve services through inspection, replacement and modernization of the collection systems to include emergency power and flood proofing. They also report they will require an additional \$1,750,000 to improve public services.

The town of Richwood reports it sustained \$66,000,000 in damage with most of the damage sustained at the water and wastewater processing plants which serves over 1,000 residents. Water loss at the plant is reported at 68%. They need funding to improve distribution/collection systems and extend services to the community, perform inspections of systems and engineering services. They also report \$9,000,000 in additional funding is needed to separate the storm and wastewater systems and to move the wastewater collection system currently located in the Cherry River. An additional \$3,000,000 to correct the storm water management on Oakford Ave to the Cherry River will also be required.

The town of White Sulphur Springs experienced damage to the community water and wastewater distribution and collection systems which serves over 1,500 residents. Additional funding needed is estimated at \$5,500,000 to repair damage to the water distribution systems and wastewater collection systems in the downtown area, perform inspections of systems, and engineering services.

Economic Impact

Pre-Existing Condition of the State's Economy

Prior to the June Floods West Virginia's economy was struggling from a downturn in coal production. Local economies throughout small towns all over West Virginia relied heavily on the coal industry. With reduced coal demand and natural gas markets trending downward, a substantial loss in jobs and in turn population, caused the State to fall into a recession beginning in 2015.¹⁸ As a result of the lagging economy, the State legislature has been forced to slash budgets in recent years. The budget deficit for the State's coming fiscal year is expected to be about \$500 million.¹⁹ The flooding event only worsened the economic problems experienced in the state, most notably a decline in income taxes due to joblessness and revenue losses due to less sales tax being collected.

Although affected communities are continuing the recovery process throughout the declared counties, they are faced with balancing the additional economic burden of long-term recovery in a state that has experienced significant population decline and stymied job growth in the last few years. The loss of coal jobs in recent years throughout Appalachia has halted the state's economy and forced many out of the workforce. Many former coal miners have failed to secure adequate employment outside of the coal industry as a result. Coupled with the state's opioid epidemic, the average West Virginian who has been affected by the flood will be vulnerable due to factors that other communities don't typically have to account for on such a large scale.

Image 17: Flooded businesses in Elkview



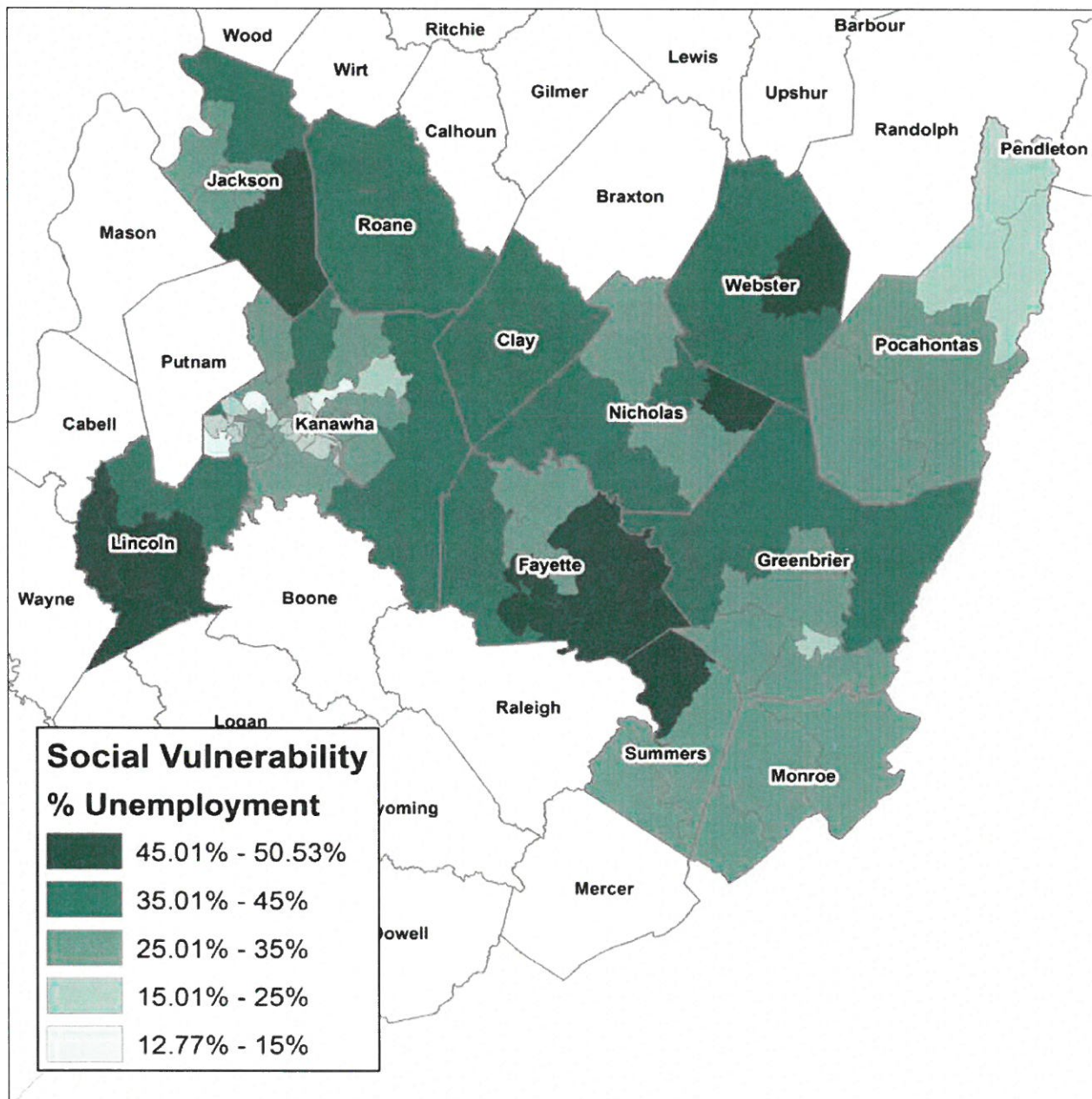
¹⁸ *West Virginia Economic Outlook 2017 – 2021*

¹⁹ <http://www.wvgazette.com/news/20170118/projected-2017-18-wv-budget-deficit-nears-500m>

Workforce/Unemployment

WorkForce West Virginia reported that the state unemployment rate was 6% prior to the flood. Although the unemployment rate improved slightly in the third quarter of 2016, it increased back to 6% by October 2016.²⁰ Compared to the U.S. unemployment rate in the same time period which decreased from 4.9% to 4.7%, West Virginia had the fourth highest unemployment rate in the U.S. The unemployment rate is directly tied to the state's loss of coal jobs, many of which sustained generations of families for decades. Additionally, many non-coal industry workers were unable to return to work immediately following the flood because of washed out roads and bridges. Officials with WorkForce West Virginia reported over 1,200 disaster unemployment claims with over \$2 million in lost wages as a result of the flood. The average weekly wage of the disaster claimants was \$472 per week which indicates a high impact to low-wage workers across the declared counties.

Figure 15: Unemployment by County



²⁰ <http://lmi.workforcewv.org/>

Small Business

The Small Business Administration received approximately 1,450 referrals for business loans of the nearly 9,000 applications submitted to FEMA, of which only 58 loans have been approved for a total of \$10 million dollars with the largest industry assisted being lessors of residential real estate or landlords.²¹ The low approval rate of business loans is indicative of the economic conditions in the state with many small business owners either being overleveraged and not willing to take a loan or denied for loan funding due to low credit worthiness or lack of required minimum income.

Additionally, RISE West Virginia, a small business grant program created by former Governor Earl Ray Tomblin, awarded mini grants to 229 small businesses as of the deadline of November 23, 2016. Small businesses affected by the flood were eligible to receive mini-grants of up to \$10,000.²²

Agriculture

The West Virginia Department of Agriculture reported approximately 40 counties with agriculture impact which includes the following estimates.

- 5,300 farms were affected
- \$1.7 million reported in corn lost/damaged
- \$1.6 million in hay lost/damaged
- \$500,000 reported in pasture damage
- \$1.2 million in reported damages to farm structures
- \$60,000 worth of machinery damages/losses
- 700 total livestock were lost (poultry (600), cattle, sheep, hogs)
- Farm fences were damaged or destroyed in at least 26 counties

Furthermore, eleven counties have requested Emergency Conservation Program implementation with approximately \$2 million in estimated damage for the following clean-up activities of agriculture land, not including streambanks or stream channels:

- Debris removal
- Grading/shaping and reseeding
- Fence replacement and repair
- Conservation structure replacement and repair

Multiple notices of loss related to mechanically harvested feed and purchased feed stuffs have been accepted through the Emergency Livestock Assistance Program (ELAP).

²¹ SBA Disaster Business Loan dataset

²² <http://wvmetronews.com/2016/12/29/raise-west-virginia-grants-for-flood-recovery-top-1-8-million/>

Tourism

The Greenbrier Classic, a world-class golf tournament held at the Greenbrier Resort near White Sulphur Springs, was forced to cancel its yearly event due to the floods. According to *The Greenbrier Classic: Impacts and Opportunities* report, the State is thought to have missed out on upwards of \$2.5 million in tax revenue. In years past, the event produced an estimated \$21 million in local lodging, shopping, food, tickets, transportation and other entertainment revenue, all of which was lost because of the cancellation. According to the 2011 economic impact study of the first tournament, the event had an overall economic impact of more than \$111 million.²³ Additionally, the state's whitewater rafting industry has seen declines due to the flooding. Recently released by the West Virginia Division of Natural Resources, which tracks the number of people rafting in the state each month, the 2016 commercial rafting numbers show that 100,312 people rafted the New and Gauley Rivers last year, down 4,687 people from 2015.

UNMET NEEDS ASSESSMENT

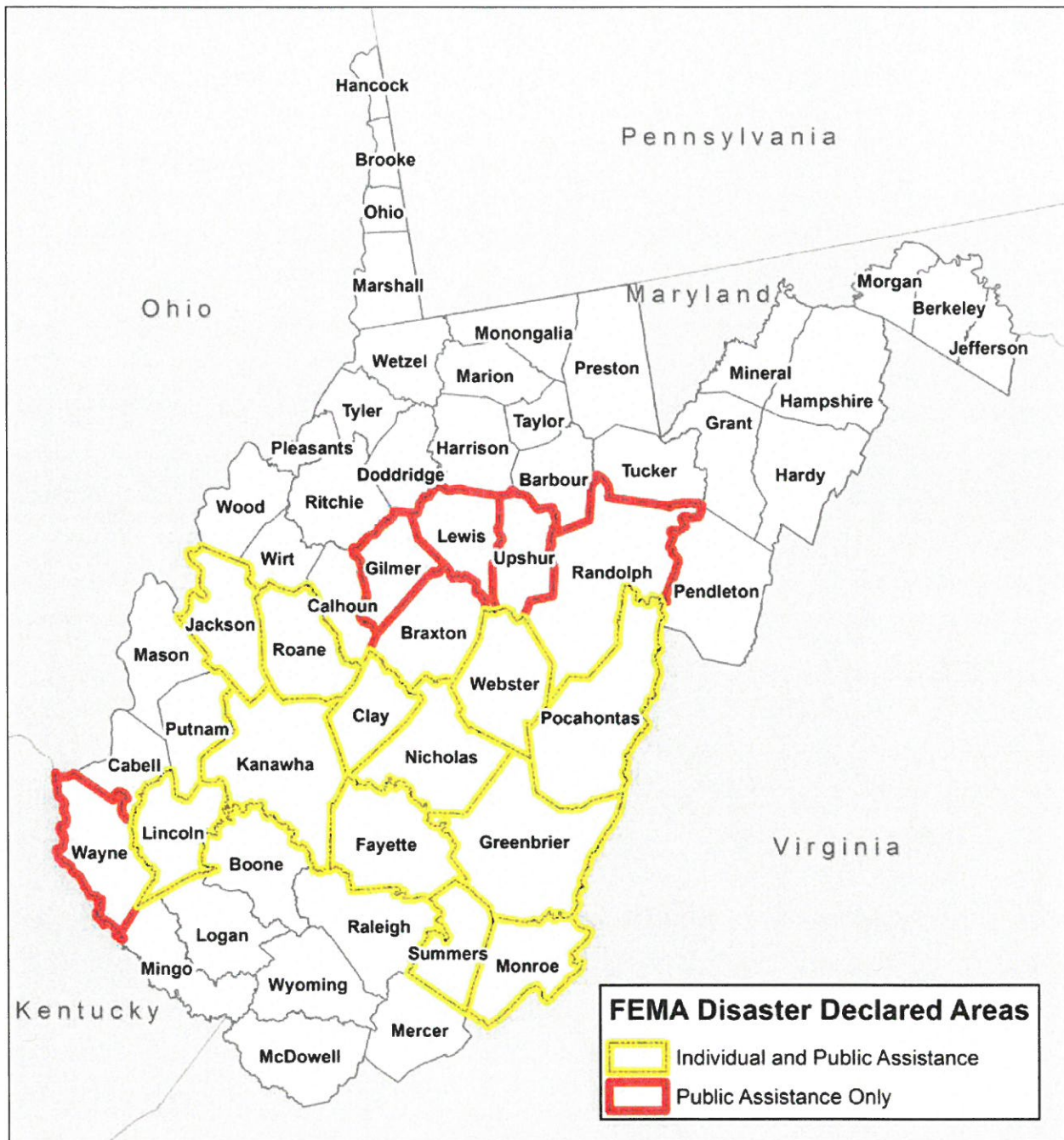
Housing Needs Assessment

Background

Once the State completed its full impact assessment, West Virginia turned its focus to the remaining unmet needs stemming from the flood in June 2016. As stated previously, this disaster affected 18 of the state's 55 counties, with 12 counties declared eligible for both FEMA IA and PA funds. The unmet needs assessment below considers federal and state resources, including the most recently available data provided by FEMA, HUD, the Small Business Administration (SBA), National Flood Insurance Program (NFIP), and other sources to estimate unmet needs specific to the housing sector. HUD initially identified the two most impacted and distressed counties from this disaster as Kanawha and Greenbrier Counties. Accordingly, this unmet needs assessment focuses on statewide impacts, with specific sections detailing particular needs within the initial HUD-identified most impacted and distressed areas and where relevant, additional locations such as Clay and Nicholas Counties.

²³ http://www.timeswv.com/news/effect-of-the-greenbrier-classic-priceless/article_cd042352-286d-11e5-a44f-cb2d73effb62.html

Figure 16: FEMA Disaster Declared Counties



With a need for residential homes as well as temporary and permanent housing, the State analyzed FEMA and SBA applicant data to estimate the number and severity of damaged homes within the impacted counties. These sources included datasets from the FEMA Individuals and Households Program, SBA Disaster Loans, and NFIP claims data. The State overlaid these datasets with census data to measure the social vulnerability of impacted populations called the Social Vulnerability Index (SoVI®).

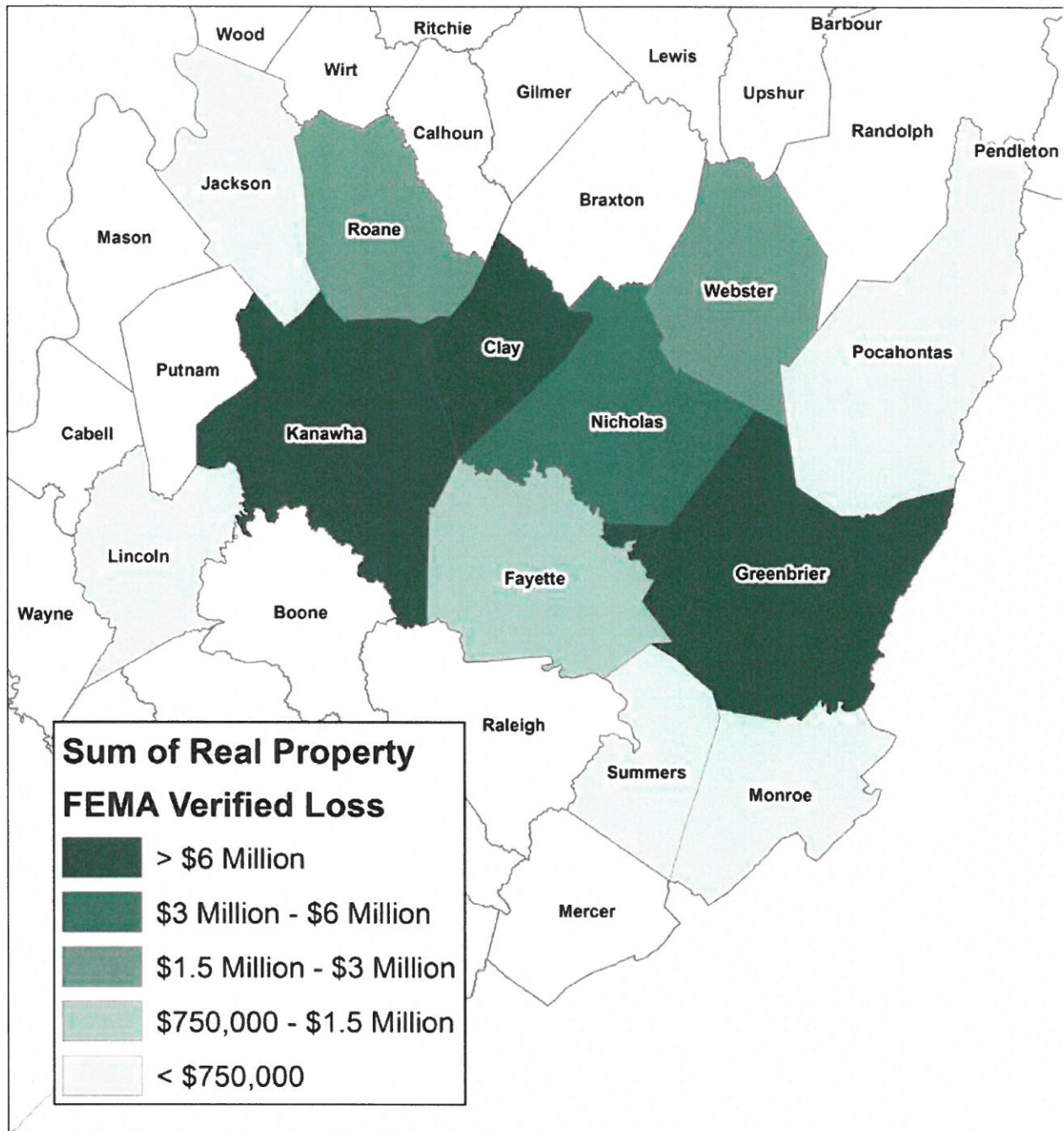
FEMA INDIVIDUALS AND HOUSEHOLDS PROGRAM (IHP)

The following data has been summarized from the FEMA Individuals and Households Program (IHP) data set. The IHP provides financial help or direct services to those who have necessary expenses and serious needs if unable to meet the needs through other means. The IHP statistics for West Virginia show many impacted residents carried no flood insurance whether they were in a flood zone or not. Many residents have expressed that flood insurance in their areas is too expensive, and therefore, not a feasible option. Additionally, many of those impacted are low-to-moderate income households and will require additional funds to fully recover to their pre-storm position.

- 8,732 FEMA registrations were received across the declared counties.
- Of the 7,053 registrants referred to the IHP, 5,130 had a real property verified loss, of which approximately 3,500 were deemed eligible for repair/replacement funding.
- The average IHP home repair/replacement grant award was \$8,260.
- Over \$45 million calculated in FEMA Real Property Verified Loss (RPVL).
- Approximately 90% of flood damaged homes were deemed unsafe after inspection.
- Based on gross income reported by the IHP applicants, over 2/3 of the applicant pool was below the 80% AMI level for their county.
- Of the 2,302 IHP applicants whose properties were located in a flood zone, only 385 had flood insurance, or about 17%.
- Of the 4,751 IHP applicants whose properties were not located in a flood zone, only 301 had flood insurance, or about 6%.

The map on the following page illustrates which counties had the highest amount of FEMA real property verified losses. Clay, Greenbrier, and Kanawha Counties each sustained more than \$6 million in FEMA real property verified losses, followed by Nicholas County which sustained between \$3 and \$6 million, then Webster and Roane Counties which experienced between \$1.5 and \$3 million. The remaining declared counties were recorded as having less than \$1.5 million in FEMA real property verified losses.

Figure 17: Sum of FEMA Real Property Verified Loss by County



SMALL BUSINESS ADMINISTRATION DISASTER HOME LOANS

The SBA Disaster Home Loan program offers low-interest loans to homeowners in a declared disaster area to assist with the repair or replacement of damaged real and personal property. After a review of the SBA Disaster Home Loan data in an economically depressed state such as West Virginia, it is evident that many disaster-affected residents were not eligible for SBA loans because of reasons such as failure of the minimum income test or lack of repayment ability due to unsatisfactory credit. Furthermore, over 65% of eligible FEMA applicants did not attempt to apply for SBA loans. During outreach, the State heard from constituents and other program administrators that many people could not take on additional financial obligations due to loss of employment and low wages and in turn, did not apply

for the SBA Disaster Home Loan program. Below are some of the statistics gleaned from the data which support this fact. The following data has been captured from the SBA Disaster Home Loan data set.

- 1,762 SBA applications were received.
- 1,058 applications were declined or withdrawn (60%).
- 697 applicants were approved for a loan (40%).
- 973 applications were received with a total calculated verified loss to real estate of \$62.6 million.
- The average home loan for damage to real estate was \$42,571.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The following data has been extracted from the NFIP data set. As evidenced previously from the FEMA IHP data, many West Virginians were without flood insurance when the June flood hit, most notably for lack of affordability of coverage or because their property was located outside a flood zone; and therefore, not required to carry flood insurance. Of the 7,053 FEMA IHP applicants, 90% did not have flood insurance. Of the residents with flood insurance only approximately 800 received a building claim payment.

- 977 NFIP claims were filed.
- 82% of claimants received a building damage payment.
- The average building claim payment was \$41,198.
- \$32.8 million in total claims were paid for building damage across the 12 counties.
- Over 65% of building claim payments were approved in seven small towns: Clendenin, Elkview, Richwood, Rainelle, Ronceverte, Alderson, and White Sulphur Springs.

Assessing the Demand for Housing Assistance

With limited funds available, the State was very deliberate in its assessment of demand for housing recovery funds. In order to address the demand for housing, the State coupled outreach efforts with a detailed assessment of damage at the unit level. This allowed the State to understand the demand for housing repairs in monetary terms and related support to households. To estimate the demand for housing rehabilitation, the State analyzed the FEMA Individual Assistance dataset, SBA disaster home and business loan dataset, as well as NFIP claims data for Disaster 4273. FEMA Individual Assistance data accurately reflects the impact of a disaster on a population by illustrating the number of registrations and the number of households approved for housing assistance. SBA disaster home loan data reflects registrations and applications for loans which result in valuations of verified loss that are more accurate to scale than FEMA verified loss calculations. Finally, NFIP claim data provides the state with one component necessary to perform the duplication of benefits calculation for the affected population and potential CDBG-DR applicant pool.

Determining Unmet Housing Needs

To understand the unmet need to be addressed by the State's CDBG-DR programs, the State built upon the above estimates of the demand (or required funding) for flood-related reconstruction, rehabilitation, and mitigation by estimating the verified loss as well as the "supply" of funding already available to offset outstanding verified loss. Many local, state, and federal programs have funded some of the need for homeowners and landlords to undertake rebuilding and rehabilitation measures. The State will use CDBG-DR funding to complement and build upon such resources.



Image 18: Damaged home in Clendenin

To determine the housing unmet need, the State first analyzed the 5,130 applicants to the FEMA Individuals and Households Program (IHP) who had a real property verified loss. Forty percent (or 2,088) of the FEMA applicants had an SBA status of FIT (failed income test). Such determination indicates, per SBA's standard operating procedures, that automatic referral to SBA's disaster loan program was bypassed and these applicants were instead referred directly to FEMA's Individuals and Household Grant Program.²⁴ Additionally, of the applicants who passed the income test and were automatically referred to SBA, twenty percent (or 376) failed the Fixed Debt Method analysis, which is an analysis to determine if applicants with household incomes above the income test table threshold have repayment ability. If they fail, a loan status of Summary Decline is indicated for the loan and the applicants are immediately referred to FEMA IHP. Given this analysis, the State understood early on in its unmet needs assessment that there would be a sizable unmet housing need due to the lack of recovery resources available to the average West Virginian, many of whom have experienced economic hardships in the last few years.

West Virginia followed HUD's lead in determining housing damage and the cost to repair that damage. Per the Federal Register Notices applicable to this Allocation (81 FR 83254, 82 FR 5591), the average cost to fully repair a home for a specific disaster to code is calculated using the average real property damage repair costs determined by the Small Business Administration for its disaster loan program for the subset of homes inspected by both SBA and FEMA for 2011 to 2013 disasters. Because SBA is inspecting for full repair costs, it is presumed to reflect the full cost to repair the home, which is generally more than the FEMA estimates on the cost to make the home habitable. Therefore, West Virginia used SBA's disaster loan data for the flood and determined an average real property verified loss amount of \$64,380 among 973 SBA disaster home loan applicants for a total verified loss of \$62,642,237. The State analyzed the remaining 789 unapproved SBA disaster home loan applicants without a real property verified loss amount and found that they were almost all declined for an SBA loan for economic reasons already discussed above, such as lack of repayment ability, failure of minimum income test, and unsatisfactory credit. Because of this fact coupled with an understanding of SBA's standard operating procedures, it is presumed by West Virginia that this population was declined for loan assistance very early on in the SBA application process and therefore, was never granted a damage assessment by SBA. Accordingly, West Virginia applied the average verified loss of \$64,380 noted above to the unapproved population which yielded a total estimated verified loss for these 789 applicants of \$50,795,820. Thus, a total of \$113,437,560 in real property verified loss was determined for the 1,762 applicants who applied for SBA assistance and were ultimately approved or denied a loan.

²⁴ <https://www.sba.gov/sites/default/files/SOP%2050%2030%207.pdf>

*Table 9: Verified Loss of FEMA Applicants Referred to SBA***VERIFIED LOSS OF FEMA APPLICANTS REFERRED TO SBA**

SBA Applicants with a Real Estate Verified Loss	973	
Average Real Estate Verified Loss	\$	64,380
Verified Loss of SBA Applicants with a Damage Assessment		\$ 62,641,740
SBA Applicants without a Real Estate Verified Loss	789	
Average Real Estate Verified Loss	\$	64,380
Estimated Verified Loss of SBA Applicants Without a Damage Assessment		\$ 50,795,820
SBA Applicants with a Real Estate Verified Loss	1,762	\$ 113,437,560

Next, the State of West Virginia set out to determine the total estimated SBA real property verified loss amount for those FEMA applicants who were determined to have physical damage to their property per the FEMA damage assessment process, but did not apply or were not referred to the SBA Disaster Home Loan Program, namely because of economic hardship. The State reviewed the FEMA IHP dataset and determined that a total of 5,129 FEMA registrants had real property FEMA verified loss amounts. Applying the average SBA verified loss methodology above to this population yields an additional 3,367 applicants (5,129 FEMA applicants less 1,762 SBA referrals already accounted for) with a total of \$216,767,460 in real property verified loss.

*Table 10: Verified Loss of FEMA Applicants that did not Apply for SBA***VERIFIED LOSS OF FEMA APPLICANTS THAT DID NOT APPLY FOR SBA**

FEMA Applicants with a Real Property Verified Loss	5,129	
Total SBA Applicants	(1,762)	
Total FEMA Applicants with a Real Property Verified Loss That Did Not Apply for SBA	3,367	
Average Real Estate Verified Loss	\$	64,380
Total Estimated Verified Loss of Non-SBA Applicants		\$ 216,767,460

Finally, the State of West Virginia wanted to also determine the real property verified loss of impacted rental property in the state because of the incidence of low-to-moderate income individuals who typically occupy these properties, particularly in heavily impacted areas such as Clendenin, Rainelle, and White Sulphur Springs. The State reviewed the FEMA IHP dataset for renters and determined that of the 1,162 renters whose unit was inspected by FEMA a total of 783 had structural damage. Applying the average SBA verified loss methodology above to this population yields an additional \$50,409,540 in estimated real property verified loss for rental properties.

Table 11: Estimated Verified Loss of Rental Properties

ESTIMATED VERIFIED LOSS OF RENTAL PROPERTIES		
FEMA Renter Applicants with Inspected Damage	783	
Average Real Estate Verified Loss	\$ 64,380	
Total Estimated Verified Loss of Rental Properties		\$ 50,409,540

In total, the State of West Virginia determined a total real property verified loss among its 5,912 potentially eligible applicants for housing repair and rehabilitation of \$380,614,560. To complete the unmet housing needs assessment, the State reduced the total real property verified loss by FEMA repair payments (\$28,656,603), NFIP building claim payments to individuals (\$27,188,147), SBA home loans for real estate (\$27,373,186), and SBA business loans to lessors of residential buildings and dwellings (\$1,902,900) to determine a total housing unmet need of \$295,493,724.

Table 12: Total West Virginia Unmet Housing Need

TOTAL WEST VIRGINIA UNMET HOUSING NEED		
Total Real Property Verified Loss	\$	380,614,560
FEMA Repair Payments	\$	(28,656,603)
NFIP Building Claim Payments to Individuals	\$	(27,188,147)
SBA Disaster Home Loans for Real Estate	\$	(27,373,186)
SBA Disaster Business Loans to Lessors of Residential Buildings	\$	(1,902,900)
Total Housing Unmet Need	\$	295,493,724
Total Housing Unmet Need including 20% Resilience Costs*	\$	354,592,469

*To calculate the Total Housing Unmet Need including 20% Resilience Cost, the State added 20% (the industry standard cost of resiliency measures) to the calculated unmet need.

Social Vulnerability Index (SoVI®)

The State has recognized that it must be deliberate in delivering CDBG-DR programs to the most vulnerable and devastated communities. Because of the vast amount of damage throughout the declared counties and the limited recovery dollars available, the State has primarily assessed the unmet housing need of the most vulnerable populations by utilizing the SoVI® method. Given the almost \$300 million in remaining unmet housing need, but the limited funding available to address those unmet needs, West Virginia considered where within the impacted areas exists uneven capacity for preparedness and response; thus, where resources might be used most effectively to reduce the pre-existing vulnerability. To that end, West Virginia utilized the Social Vulnerability Index (SoVI®), which is a tool for assessing pre-existing vulnerabilities to environmental hazards and was developed

by the University of South Carolina in response to the devastating flood that hit South Carolina in October 2015. The SoVI® is a comparative metric that facilitates the analysis of differences in social vulnerability at a certain level of geography – in the case of West Virginia, at the county level. The index, in this iteration, synthesizes 29 socioeconomic variables, listed below, which, with support from research literature, can contribute to a reduction in a community's ability to prepare for, respond to and recover from hazards.

Table 13: Socioeconomic Variables

<i>VARIABLE</i>	<i>DESCRIPTION</i>
QASIAN	Percent Asian
QBLACK	Percent Black
QHISP	Percent Hispanic
QNATAM	Percent Native American
QAGEDEP†	Percent of Population Under 5 Years of 65 and Over
QFAM†	Percent of Children Living in Married Couple Families
MEDAGE	Median Age
QSSBEN	Percent of Households Receiving Social Security
QPOVTY	Percent Poverty
QRICH200K	Percent of Households Earning Greater Than \$200,000 Annually
PERCAP	Per Capita Income
QESL†	Percent Speaking English as a Second Language with Limited English Proficiency
QFEMALE	Percent Female
QFHH	Percent Female Headed Households
QNRRES	Percent of Population Living in Nursing and Skilled Nursing Facilities
HOSPTPC	Hospitals Per Capita (County Level Only)
QNOHLTH†	Percent of Population Without Health Insurance (County Level ONLY)
QED12LES	Percent with Less Than 12th Grade Education
QCVLUN	Percent Civilian Unemployment
PPUNIT	People Per Unit
QRENTER	Percent Renters
MDHSEVAL†	Median House Value
MDGRENT†	Median Gross Rent
QMOHO	Percent Mobile Homes
QEXTRCT	Percent Employment in Extractive Industries
QSERV	Percent Employment in Service Industry
QFEMLBR	Percent Female Participation in Labor Force
QNOAUTO†	Percent of Housing Units with No Car
QUNOCCHU	Percent of Unoccupied Housing Units

The SoVI® built in West Virginia's impact and needs assessment is primarily derived from U.S. Census Bureau and FEMA IHP data. The SoVI® created for the state's 12 counties affected by DR-4273 incorporates six general components synthesizing the 29 socioeconomic variables:

- Class and race
- Non-extractive (less rural)
- Age
- Ethnicity
- Gender
- Housing characteristics (persons per unit, renters, unoccupied units, female-headed households)

In order to identify communities with the greatest need for additional resources, West Virginia combined SoVI® with other data sources, such as the FEMA IA dataset, NFIP data and SBA data. The State has collaborated with Dr. Christopher Emrich with Disaster Metrics, Inc. who was a key partner for the development of South Carolina's long-term recovery plan stemming from the state's 2015 floods. This collaboration resulted in West Virginia's ability to target the use of these resources to the communities most impacted and least able to recover on their own from the 2016 floods.

The following SoVI® map illustrates the results of the analysis by overlaying the most vulnerable and severely impacted population among the declared counties. It highlights specific areas within the declared counties where the most impacted populations reside by layering the disaster data over census tract data. By utilizing the longitude and latitude coordinates of the disaster affected properties gleaned from the FEMA IHP data set, the State has been able to identify exactly which towns were hit the hardest and consist of the most critically vulnerable populations.

This SoVI® map identifies multiple areas determined to have the highest levels of pre-existing social vulnerability and those which experienced high concentrations of damage. These communities are located in eastern and southwestern Greenbrier, central Clay, northeastern Nicholas and northern Kanawha Counties.